WHAT IS CLAIMED IS:

1. A perpendicular read/write head for use in a disc drive storage system to record data to, and read data from, a magnetic medium of a rotating disc, the head comprising:

a perpendicular writing element including a main pole, a return pole located downstream of the main pole relative to the rotating disc and connected to the main pole at a back gap, a write gap between the main and return poles, and a conductive coil between the main and return poles and adapted to induce magnetic flux therein;

a perpendicular reading element upstream of the perpendicular writing element and including a top shield, a bottom shield upstream of the top shield, and a read sensor positioned between the top and bottom shields; and

a non-magnetic layer separating the top shield from the writing main pole.

2. The head of claim 1, wherein the main and return poles are formed of a magnetically permeable material selected from a group consisting of CoZr, CoZrNb, $Ni_{45}Fe_{55}$, FeN, FeAlN, cobalt-iron (CoFe), cobalt-nickel-iron (CoNiFe), nickel-iron (NiFe), and iron (Fe).

3. The head of claim 1, wherein the non-magnetic layer is formed of a non-magnetic insulating material.

4. The head of claim 3, wherein the non-magnetic layer is formed of silicon oxide (SiO_2), silicon nitride (Si_3N_4), aluminum oxide (Al_2O_3), or tantalum oxide (Ta_2O_5)

5. The head of claim 1, wherein the non-magnetic layer is formed of a conductive layer sandwiched between insulating layers.

6. The head of claim 5, wherein the conductive layer is copper (Cu), aluminum (Al), tantalum (Ta), or tungsten (W), and the insulating layers are aluminum oxide (Al_2O_3), silicon oxide (SiO_2), tantalum oxide (Ta_2O_5) or silicon nitride (Si_3N_4).

7. The head of claim 1, wherein a thickness of the non-magnetic layer is approximately 1 micrometer or greater.

8. The head of claim 1, wherein the gap layer defines a write gap of approximately 1 micrometer or less.

9. A disc drive storage system including the read/write head of claim 1.

10. A perpendicular read/write head for use in a disc drive storage system to record data to, and read data from, a magnetic medium of a rotating disc, the head comprising:

a perpendicular writing element including a main pole, a return pole located downstream of the main pole relative to the

rotating disc and connected to the main pole at a back gap, a write gap between the main and return poles, and a conductive coil between the main and return poles and adapted to induce magnetic flux therein; and

a perpendicular reading element downstream of the perpendicular writing element and including a top shield, and a read sensor positioned between the top shield and the return pole, wherein the wherein the return pole serves as a bottom shield for the read sensor.

11. The head of claim 10, wherein the main and return poles are formed of a magnetically permeable material selected from a group consisting of CoZr, CoCzNb, $Ni_{45}Fe_{55}$, FeN, FeAlN, cobalt-iron (CoFe), cobalt-nickel-iron (CoNiFe), nickel-iron (NiFe), and iron (Fe).

12. The head of claim 10, wherein the write gap is approximately 1 micrometer or less.

13. A disc drive storage system including the head of claim 10.

14. A disc drive storage system, comprising:

a rotating disc having a recording medium; and

a read/write head means for performing perpendicular recording and reading of magnetic signals in the recording medium at a high areal density.

15. The system of claim 14, wherein the read/write head means includes:

a perpendicular writing element including a main pole, a return pole located downstream of the main pole relative to the rotating disc and connected to the main pole at a back gap, a write gap between the main and return poles, and a conductive coil between the main and return poles adapted to induce magnetic flux therein;

a perpendicular reading element upstream of the perpendicular writing element and including a top shield, a bottom shield upstream of the top, and a read sensor positioned between the top and bottom shields; and

a non-magnetic layer separating the top shield from the main pole.

16. The head of claim 15, wherein a thickness of the non-magnetic layer is approximately 1 micrometer or greater.

17. The head of claim 15, wherein the non-magnetic layer is formed of a conductive layer sandwiched between insulating layers.

18. The head of claim 17, wherein the conductive layer is copper (Cu), aluminum (Al), tantalum (Ta), or tungsten (W), and the insulating layers are aluminum oxide (Al_2O_3), silicon oxide (SiO_2), tantalum oxide (Ta_2O_5) or silicon nitride (Si_3N_4).

19. The system of claim 14, wherein the read/write head means includes:

a perpendicular writing element including a main pole, a return pole located downstream of the main pole relative to the rotating disc and connected to the main pole at a back gap, a write gap between the main and return poles, and a conductive coil between the main and return poles and adapted to induce magnetic flux therein; and

a perpendicular reading element downstream of the perpendicular writing element and including a top shield, and a read sensor positioned between the top shield and the return pole, wherein the wherein the return pole serves as a bottom shield for the read sensor.